

Watershed-Based Zoning

Most zoning in North Carolina is done by individual jurisdictions and is generally removed from impact on water quality. Watershed-based zoning better addresses water quality issues by evaluating the intensity of use/land coverage relative to a position within a watershed, but may require new legislation in North Carolina. This type of zoning differs from conventional zoning in that it relies on separating uses by type and density. Dwelling units per acre, which fails to account for transportation-related impervious cover such as roads, sidewalks, parking lots, etc, defines most residential zones. Watershed-based zoning uses the boundaries of the watershed and subwatershed as the foundation for land use planning and as a basis for future land use decisions. This is a helpful tool for relocating development out of certain subwatersheds. This type of zoning requires a comprehensive stream inventory to determine the overall health of streams and projections for future growth and impervious surface cover.

One paradox associated with watershed-based zoning is that it assumes the best way to minimize impervious cover in a watershed at a regional scale is to concentrate as much high-density clusters as possible in subwatersheds with high impervious surface levels (normally 25% to 100%) in order to steer development away from and protect subwatersheds with a 10% or less level of impervious cover. Schueler notes in *Environmental Land Planning Series: Site Planning for Urban Stream Protection* that it may be necessary to further develop in a subwatershed with high levels of impervious cover, in order to preserve and protect a high quality subwatershed with 10% or less impervious cover. This could lead to more degradation in the highly impervious subwatershed; however, you cannot “degrade” water quality below standards. Under watershed-based zoning, subwatersheds with an impervious cover level of 25% to 100% are designed for future growth and redevelopment and possess no impervious level caps. Other water quality protection in these highly impervious subwatersheds would be necessary, such as structural BMPs.

Healthy subwatersheds with an impervious level of 10% or less and sensitive subwatersheds with an impervious cover level of 11% to 25% do possess development caps to protect water quality. Limits on impervious cover can be enforced through zoning controls or encouraged through incentives at the

Example Ordinances

The **Stormwater Center** offers several draft ordinances and examples of ordinances adopted by other communities that can be used to protect water quality by preventing nonpoint source pollution. Draft ordinances can be found on the website:

<http://www.stormwatercenter.net/>.

Example ordinances are available for:

- Post-Construction Stormwater Management
- Stream Buffer Ordinances
- Illicit Detection and Elimination Measures
- Erosion and Sediment Control Requirements
- Open-Space Design Zoning Controls
- Operation and Maintenance Criteria for Stormwater Practices
- Groundwater-Protection Ordinances
- Miscellaneous (Golf Course Management, Forest Conservation, etc.)